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U.S. EPA COMMENTS ON THE DATA VALIDATION PLAN COMPONENT OF THE SIDE-WIDE QUALITY ASSURANCE PROJECT PLAN

01/14/92

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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JAN 14 1992

REPLY TO THE ATTENTION OF:

HRE-8J

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: U.S. EPA Comments on the Data Validation Plan Component of the Site-Wide Quality Assurance Project Plan

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the Data Validation Plan (DVP) portion (Sections 11.2 and 11.4, and Appendix D) of the Site-Wide Quality Assurance Project Plan (QAPjP). The DVP was reviewed to determine whether the United States Department of Energy (U.S. DOE) has satisfactorily responded to U.S. EPA's previous comments in January, May, and August of 1991. Since this revision of the DVP is a complete reorganization of earlier versions and due to a considerable quantity of new material which was included in the DVP, cross-referencing comments between earlier versions was not practical.

Therefore, U.S. EPA has enclosed comments on the DVP. Responses to these comments must be incorporated into the revised QAPjP.

If you have any questions please contact me at (312/FTS) 886-0992.

Sincerely,

James A. Saric
Remedial Project Manager

Enclosure

cc: Graham Mitchell, OEPA-SWDO
Pat Whitfield, U.S. DOE-HDQ

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U.S. EPA COMMENTS ON THE DATA VALIDATION PLAN

GENERAL

Overall, this version of the DVP is much improved. This version of the DVP excludes the use of the much-criticized forms for review of Contract Laboratory Program (CLP) assays. Since experience has shown that appropriate forms speed the validation process, U.S. DOE may find it useful to add appropriate forms at a later date. There are several validation criteria for these assays which are different from those in U.S. EPA data validation guidelines (cited as U.S. EPA, 1988a, and 1986b in this DVP). The criteria for organic assays (especially continuing calibration windows for all analytes and minimal response factors for volatile and semivolatiole analytes) are significantly less stringent; laboratory results of no chemical detected that would be rejected under U.S. EPA data validation guidelines may be accepted, unqualified, by these procedures. In contrast, the criteria for inorganic assays for laboratory duplicates are tighter because the acceptable limits for water samples are also applied to soil and sediment samples. Therefore, some inorganic soil samples may be qualified as estimates when U.S. EPA guidelines would not require any qualification. The potential effect of these rejections of data on remedial decision making must be considered.

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SPECIFIC REVIEW COMMENTS
DATA VALIDATION PLAN

Specific comments on the data validation plan (DVP) prepared for the U.S. Department of Energy (DOE) are presented by section, page, and paragraph or bullet (when appropriate) of the October 31, 1991 draft.

1. **Glossary, Page 9** -- A summary of the qualifiers to be used by data validators is still needed in the glossary. This addition would be most useful as part of a new entry for "validation" or "data validation" in the "Terminology" section of the Glossary. The information for this addition is available in Sections D.1.1 and D.2.3, but a Glossary entry is much easier to locate and use.

2. **Section D.2.5.3, Page D-9, Paragraph 1** -- This paragraph should refer to "the DFQAPjO's recommendations" rather than to "the data user's recommendations."

3. **Section D.4.3, Page D-14, Bullet 4** -- A sample value should not be reported as "less than the detection limit." This phase should be rewritten as "less than the quantitation limit."

4. **Section D.5, Page D-14, Paragraph 1** -- The relation of the data validation procedures discussed in this paragraph to the Analytical Support Levels (ASL) should be explained. There seem to be no references at all to ASL A data in this DVP; it is unclear whether these procedures are applicable to ASL A.

5. **Section D.5.2.1, Page D-15, Paragraph 1** -- The Field Sampling/Data Collection Package (FSDCP) is not defined in Appendix F, as cited. It does not seem to be in Appendix K either, the most logical place for it.

6. **Section D.5.2.1, Page D-16, Paragraph 10** -- Some guidance on what determines "qualitative" or "unusable" results is needed. The statement

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"as appropriate" is inadequate. This problem also appears in several other places in this DVP.

7. **Section D.5.2.4, Page D-17, Paragraph 1** -- The referenced field instrument calibration logs should be included in Appendix I or elsewhere.

8. **Section D.5.3.1, Page D-18** -- The "master sample list" is used as a checklist in several of the field data validation procedures, so a format for the master sample list should be included in the DVP.

9. **Section D.6.1.1, Page D-20, Bullet 2** -- This DVP has exercised the discretion permitted by EPA guidelines (cited as U.S. EPA, 1988a in this DVP) to allow a longer pre-extraction holding time for soil/sediment samples (14 days) than for water samples (7 days), while most data validators apply the shorter period for all samples for the extractable assay. Therefore, PRC will always have some doubt about assay reports that no chemical has been detected.

10. **Section D.6.2.1, Page D-21** -- These tuning criteria change from time to time as new editions of the EPA's statement of work (SOW) are released. For instance, the given list has many variances from the list in the EPA data validation guidelines and one variance from the most recent SOW available to PRC (OLM01.6). A new SOW (OLM01.7) has been issued, but not yet received, and that may contain additional changes. Some disclaimer or a reference to the applicable SOW should be included in the DVP.

11. **Section D.6.3.1, Page D-26** -- These calibration criteria are significantly less stringent than those in EPA guidelines, especially for relative response factors (a lower limit of 0.01 instead of 0.05). There may be some justification for relaxing these criteria for Appendix IX compounds which are not on the contract laboratory program (CLP) target list, but there is no reason to relax criteria for all compounds to such an extent.

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12. **Section D.6.4.2, Page D-29, Paragraph 5** -- Toluene is also a common laboratory contaminant, and should be included in the bulleted list.

13. **Section D.6.8.2, Page D-37, Paragraphs 7 and 8** -- Paragraphs 7 and 8 duplicate Paragraphs 5 and 6. Also, the data validation guideline's section on use of the flag "R" for extremely low area counts and abrupt decreases in those counts is omitted, but should be included for guidance.

14. **Section D.6.10.2, Page D-39** -- It is useful to include the formulas for quantitation (including dilution factors) in this section, as a reference for the data validator.

15. **Section D.6.11.2, Page D-42, Paragraph 13** -- The last line of this paragraph omitted useful information from the EPA data validation guidelines. It should read "(1,3,5-trimethyl benzene to trimethyl benzene isomer) or to a compound class (2-methyl-3-ethyl benzene to substituted aromatic compound)."

16. **Section D.7, Page D-43** -- It does not seem appropriate to use a relatively low level system (the ASL B forms cited in this section) to review high level results (the ASL E data) which is the subject of this section. In fact, ASL E methods are usually very similar to ASL D methods. Some rethinking is needed.

17. **Section D.8.11, Page D-45, Bullet 3** -- This bullet is the same as bullet 2, Section D.6.1.1, so PRC's comment No. 9 applies here as well.

18. **Section D.8.1.2, Page D-45, Paragraph 1** -- The note on preservatives is irrelevant; pesticide samples are rarely, if ever, preserved.

19. **Section D.8.2.1, Page D-46, Paragraph 1** -- This DVP omits the requirements for a DDT retention time of at least 12 minutes on packed columns. Unless contract specifications require capillary columns, this

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requirement should be added. In addition, all versions of the CLP SOW include checks of the retention time of the surrogates (dibutylchlorendate in the earlier SOW, tetrachloroxylene and decachlorobiphenyl in the more recent SOW), which are essential to monitor the reproducibility of the successive runs. These checks should also be included in the DVP.

20. **Section D.8.2.1, Page D-48, Paragraph 2** -- Means to detect and consequences of problems with endrin and DDT breakdown (as well as DDT and surrogate retention times) should be added to the DVP.

21. **Section D.8.3.2, Page D-48** -- This section should also include the requirements for continuing calibration frequency (that is, for the analytical sequence).

22. **Section D.8.3.7, Page D-50, Paragraph 1** -- As with gas chromatography/mass spectroscopy assays (Section D.6.3.1), this DVP allows calibration factor shifts greater than those in the EPA data validation guidelines. Therefore this DVP would accept laboratory results the guidelines would reject.

23. **Section D.8.8.3, Page D-56** -- This section should include the useful discussion on identifying multipeak analytes in the EPA data validation guidelines.

24. **Section D.9.2.3, Page D-63, Paragraph 4.c.(5)** -- The critical value should be cited as 130 percent, not as 135 percent. Also, the corresponding guideline for mercury (with a critical value of 135 percent) is omitted from Page D-64.

25. **Section D.9.3.2, Page D-65, Paragraph 4** -- Please clarify the phrase "below the negative RDL."

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26. **Section D.9.6.1, Page D-69** -- This criterion applies the stricter water criteria to both water and soil samples. Therefore the DVP may qualify laboratory data which the EPA data validation guidelines would accept.

27. **Section D.9.8.2, Page D-72** -- It is not clear why the furnace AA scheme is not used for ASL D data. If anything, since this scheme provides a means of confirming or correcting technical problems with an assay, it should be omitted for the less strict ASL C and included for ASL D, rather than the reverse.

28. **Sections D.10.2, D.10.3, and D.10.4; Page D-77** -- These sections do not provide enough information. At a minimum, bullets citing the frequently/routinely used measures should be included. Examples include sample preparation (very extensive for radiochemical methods), instrument calibrations and blanks (usually daily), laboratory control samples (LCS), method blanks, laboratory duplicates, and so on. Section D.12.3 is an excellent example of the sort of criteria that are expected. Until more specific guidelines are established, these sections cannot be approved for use at Fernald site.

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